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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 26 NOV 2003

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Applicant's or agent's file reference MSP616	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/PEA/416)	
International application No. PCT/EP03/04349	International filing date (day/month/year) 08.04.2003	Priority date (day/month/year) 10.04.2002
International Patent Classification (IPC) or both national classification and IPC H05H1/24		
Applicant DOW CORNING IRELAND LIMITED et al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
☐ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
These annexes consist of a total of sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the opinion
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 08.09.2003	Date of completion of this report 25.11.2003
Name and mailing address of the international preliminary examining authority:  European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer de la Cal Heusch, E Telephone No. +49 89 2399-2008 

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP03/04349**

I. Basis of the report

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17):*

Description, Pages

1-21 as originally filed

Claims, Numbers

1-24 as originally filed

Drawings, Sheets

1-5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
☐ the language of publication of the international application (under Rule 48.3(b)).
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority in written form.
☐ furnished subsequently to this Authority in computer readable form.
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:
☐ the claims, Nos.:
☐ the drawings, sheets:

**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT**

International application No. **PCT/EP03/04349**

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-24
	No: Claims	
Inventive step (IS)	Yes: Claims	1-24
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-24
	No: Claims	

2. Citations and explanations

see separate sheet

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No: PCT/EP03/04349

Re Item V

Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

References

Reference is made to the following documents:

- D1:** US-A-6 013 337 (KNORS CHRISTOPHER JOHN) 11 January 2000 (2000-01-11).
- D2:** US-A-5 939 151 (SORDELET DANIEL J ET AL) 17 August 1999 (1999-08-17).
- D3:** US-A-5 529 631 (FUKUURA YUKIO ET AL) 25 June 1996 (1996-06-25).

Object

The object of the present invention is to obtain a cost effective atmospheric plasma treatment, principally for coating, of flexible substrates.

Prior art

D1 discloses a coating method comprising basically pretreating the substrate with a plasma (for improving adherence), vaporising with the help of an atomizer an organic component onto the substrate and curing the condensed layer with an electron gun. In order to obtain a multilayer coating this process is repeated and several further process steps are performed. The substrate is located inside a vacuum chamber on a rotating drum. No details of the plasma assembly are given.

D2 discloses a device for producing AlN powder comprising a plasma gun for producing nitrogen ions and an atomizer in which molten aluminium is gravity fed into a chamber.

D3 describes a device for modifying or coating a substrate by continuously moving a substrate through an atmospheric plasma chamber, thereby exposing the substrate surface to the plasma. The plasma gas determines the surface treatment (coating, etching, etc.). The RF plasma processor is planar and there is no atomizer disclosed.

WO 02/35576, published after the priority of the present application, basically discloses the plasma assembly of the preamble of claim 1 of the present application. It is cited in the application on § 18.

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**INTERNATIONAL PRELIMINARY
EXAMINATION REPORT - SEPARATE SHEET**

International application No. PCT/EP03/04349

Independent claims

Claim 1.

Solution and assessment

According to claim 1, an atmospheric plasma assembly is disclosed, comprising two adjacent planar plasma chambers which generate two plasma regions where the substrate is moved through with the help of transporting means successively and wherein an atomiser located in one of this separated chambers.

The here claimed invention is new and inventive over the searched prior art in the sense of Art. 33 PCT.

Remarks

1.) In order that the embodiment of Fig. 4 falls clearly within the scope of the claims, the examiner suggests to reformulate claim 1 with the following wording: "***at least a first and a second pair of vertically arrayed ... forming at least a first a second plasma regions...***"

2.) For the regional European phase D3 should be cited in the introductory portion of the description, since it discloses an atmospheric plasma assembly with similar transporting means and can be considered the closest prior art document for question of inventive step.

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